A APPENDICIES

APPENDIX A: PEDESTRIAN NETWORK ANALYSIS

An experimental component of Growing Transit Communities involved creating a pedestrian network in the study areas and determining how individual projects impacted connectivity. Using open source data, along with a combination of datasets from the City, we were able to build a functioning network of the pedestrian system. This type of analysis allowed us a more objective understanding of how crossing, sidewalk, and corridor safety projects changed the existing network.

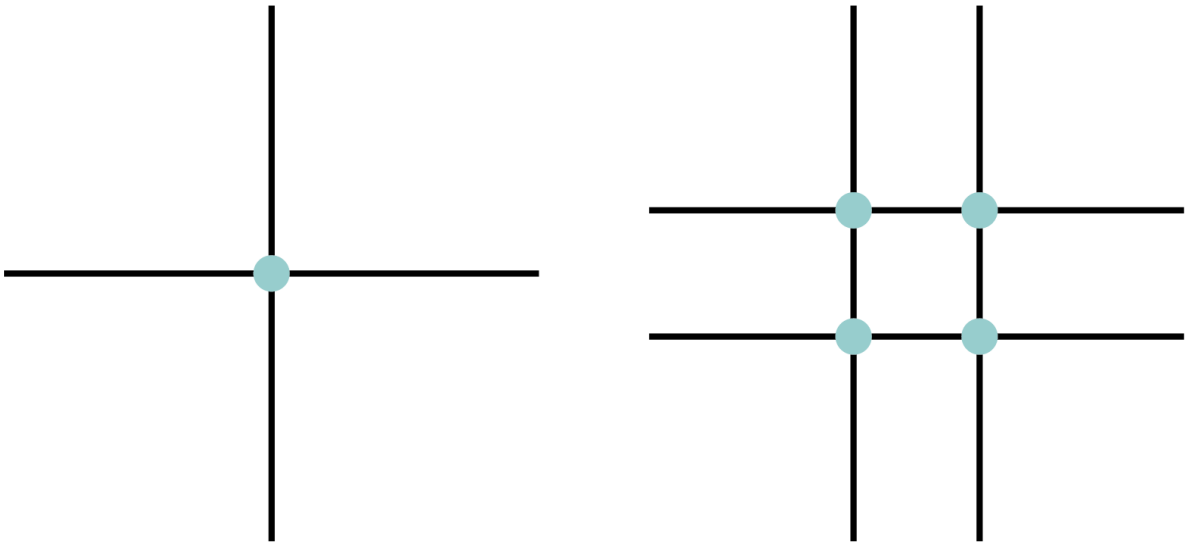
PBOT, in collaboration with BPS, employed geographic information systems (GIS) and piggybacked off pedestrian network tools that have been in development for over five years by researcher Scott Parker. Parker's tools were used with a combination of the ArcGIS Network Analyst tools to estimate the accessibility of the study areas by pedestrians and to test the potential impact that projects played in the pedestrian environment.

Measuring the accessibility and potential improvements to the pedestrian network included: (a) attributing the pedestrian network for the Growing Transit Communities areas with the necessary data (e.g., speed limit, number of lanes, sidewalk presence, crossing treatments), (b) determining impedance levels for different crossing treatments with the help of traffic engineers, (c) making decisions about what to use as the origins and destinations in the network, and (d) actually running the model before and after the projects were programmed into the network.

Before moving forward, it should be noted that there are still some limitations with this tool. Attributing the sidewalk presence and crossing treatments is automated to some extent, but still requires manual input. Also, manual editing is required after the walkway network is generated to handle difficult intersections (e.g., MAX crossings on Burnside Street, five or more corner intersections).

CREATING AND ATTRIBUTING THE NETWORK

Using the network analysis functionality in GIS typically means that the user is working with a centerline when dealing with street data. However, the street centerline is not an accurate representation of what the pedestrian experiences. On a busier arterial a person will walk on one side of the street and cross from the nearest corner to the nearest corner. When modeling the pedestrian network it is not accurate for the pedestrian to only encounter one crossing if they are crossing from north-south or east-west on a street. In the example below you can see that the centerline only has one line to use to get to the node and then one option for crossing at the node. In reality, a pedestrian will use either side of the street depending on sidewalk presence and will cross from nearest corner to nearest corner.



This illustration shows the difference between how the centerline (left) and walkway network (right) handle intersections.

This processing of splitting the centerline is called “unzipping”, a term coined by Ellen Vanderslice. When the network is “unzipped” it becomes a more accurate representation of the street network from the pedestrian’s point of view. This process allows the user to assign sidewalk presence and different crossing treatments to the lines and nodes. With this attribution of the pedestrian environment the model will actually know what side of the street to walk on and how different crossing treatments impact the ability to cross a given intersection. The idea of “unzipping” the street centerline was developed by Vanderslice and Parker and employed for an earlier study called East Portland In Motion. For the last five plus years Parker has been working on a way to automate this process with extensions for the ArcMap software. More details about these tools and the creation of the walkway network can be found in a

presentation by Vanderslice and Parker from the 2015 Walk21 International Walking Conference (http://ellenvanderslice.com/walkwaynetwork/pdf/Vanderslice_Parker_2015.pdf).

The actual creation of the walkway network was performed by Neil Loehlein at BPS and required combining multiple datasets. Trails were added to the walkway network because they are not a part of the street centerline. Freeways were also removed from the centerline because pedestrians are not supposed to walk along the side of freeways. Another predicament presented itself when on- or off-ramps intersected ordinary roadways that pedestrians might be using. This necessitated a classification in the network called "non-walks" for places like this. Additionally, bridges needed to allow a pedestrian to pass, but not turn. Parker's tool automates a lot of these processes, but there was still a need to go back and do manual spot-checking.

The walkway network is generated using Parker's tools, but the centerline still holds the data needed for generating the impedances (e.g., speed limits, number of lanes, traffic control devices, and sidewalk presence). These values are vital for determining the impedances and need to be updated before the walkway gets generated. The editing process requires generating the network and then examining to check the accuracy. Once thoroughly checked, the impedance values can be generated.

DETERMINING IMPEDANCE LEVELS

Before generating the impedances the network is only weighted by the actual distances of the sidewalk and crossing distances. This means that the impedance assigned to a street or crossing segment reflects the raw distance before being weighted by an impedance equation. This impedance equation is imbedded in Parker's tool and takes into consideration speed limits, number of lanes, traffic control type, and sidewalk presence. Running these values through the equation assigns an impedance value for each line segment and these values play a role in how the pedestrian navigates the network.

The starting point for generating impedances is the speed limit, number of lanes, and sidewalk presence. These are considered factors that would prevent a person from walking on the side of a major arterial road. The higher impedance means that the pedestrian would likely choose an alternative route. The hope is that the impedance values mean the pedestrian will select the safest route with sidewalks and adequate crossing treatments. Assigning the impedances of the crossing treatments required talking in detail with traffic engineers to see what type of difference the various crossing treatments make. The crossing treatments used in the networks for this project included full signals, High-Intensity Activated crossWalK (HAWK) beacons, Rectangular Rapid Flash Beacon (RRFB), pedestrian signals, crossings with islands, and stop signs.

SELECTING ORIGINS AND DESTINATIONS

Throughout the course of this project there were many discussions about what to use for the origins and destinations in the network. From the beginning, the team recognized that compiling a comprehensive list of destinations was cumbersome and that destinations are subjective. With this being said, we ultimately decided that using all addresses within a half mile radius of a project would catch the majority of potential destinations that a person might attend. This also helped determine how a specific project would improve the overall connectivity of an area.

PERFORMING THE NETWORK ANALYSIS

There were two different network calculations that the team used. Parker developed one set of tools in ArcMap that allows the user to make calculations quickly and to visualize the data in different ways. The second network calculation is called the "OD Cost Matrix" in ArcMap Network Analyst. The team decided that the "OD Cost Matrix" tool was the best choice for this project because it can show how specific projects change the network. Most importantly, the "OD Cost Matrix" methodology gave us a raw number that we could plug into the Active Trans Priority Tool. This raw number was the difference between the network before and after a project.

The example above shows the network before and after a crossing projects at Stark Street and 136th Avenue. Notice how the impedance decreases with the introduction of a Rectangular Rapid Flash Beacon (RRFB).

Steps in the network analysis included:

1. **Creating a "before" and "after" network.** The baseline pedestrian network was created using a combination of all the datasets that were merged when BPS was building the network.

2. **Calibrating the score for the network before the projects.** This portion of the pedestrian network analysis required generating the network and then ensuring that the scores looked accurate. A lot of time was spent making sure that the arterial streets had the correct impedances for intersections without crossings and the correct impedances for those with crossings.

3. **Generate scores for the sidewalk, crossing, and corridor safety projects.** These were the three types of projects that were deemed appropriate for this analysis. Individual projects were added into the data using a component of the tool that Parker developed.

4. **Run all the networks through the "OD Cost Matrix" tool.** To select all the addresses within a half mile of a project a model was developed to automate this process. Using the "OD Cost Matrix" tool for each network before and after a project required building a model in ArcMap that would generate the scores for both networks. The output of this second tool was the change in the distance before and after the project. This helped us to see if the project actually changed the network and how much it changed. This portion of the project required a lot of computing power and multiple computers were run at the same time, sometimes even overnight.

5. **Comparing the results of all the applicable projects.** The projects that have the largest difference between the before and after network are the projects that should, in theory, have the most positive impact on the network.

6. **Plugging the scores into the Active Trans Priority Tool.** The last step with the pedestrian network data was to plug it into the Active Trans Priority Tool. Some of the projects were bundled into the tool based off the mode type before this step, so this meant that some types of projects were reformatted and run separately (i.e., crossing and traffic signals got split out).

APPENDIX B:
ACTIVE TRANS PRIORITY TOOL

A major component of Growing Transit Communities required coming up with criteria and a methodology for scoring projects against one another. In our search to find the right tool, we encountered the Active Trans Priority Tool. This tool was developed by the National Cooperative Highway Research Program (NCHRP) as a resource to help planners score pedestrian and bicycle projects in the existing roadway. Fortunately, our selection process helped us determine what criteria to use in our analysis and how to format it to work with this interactive tool.

With the public process we asked for feedback concerning people's priorities. Using this approach allowed us to determine how to weight the different criteria in the Active Trans Priority Tool and get a sense of what the public wanted. Below is a list showing how the different measures factored into the tool.

The Active Trans Priority Tool requires GIS software to create buffers around the projects one is trying to score. Different buffer sizes were used for different measures based on distances agreed upon by the planners. Some of the data used covered areas and was not point data, so we used an intersection method that averaged the scores for the areas the project intersected.

Data for the different projects was processed in ArcMap and then exported to Microsoft Excel to be formatted. Once formatted, the data was plugged into the Active Trans Priority Tool and then manipulated based off the prioritized criteria. (mention the different scenarios and all the other factors that played into how the projects were bundled/ tiered).

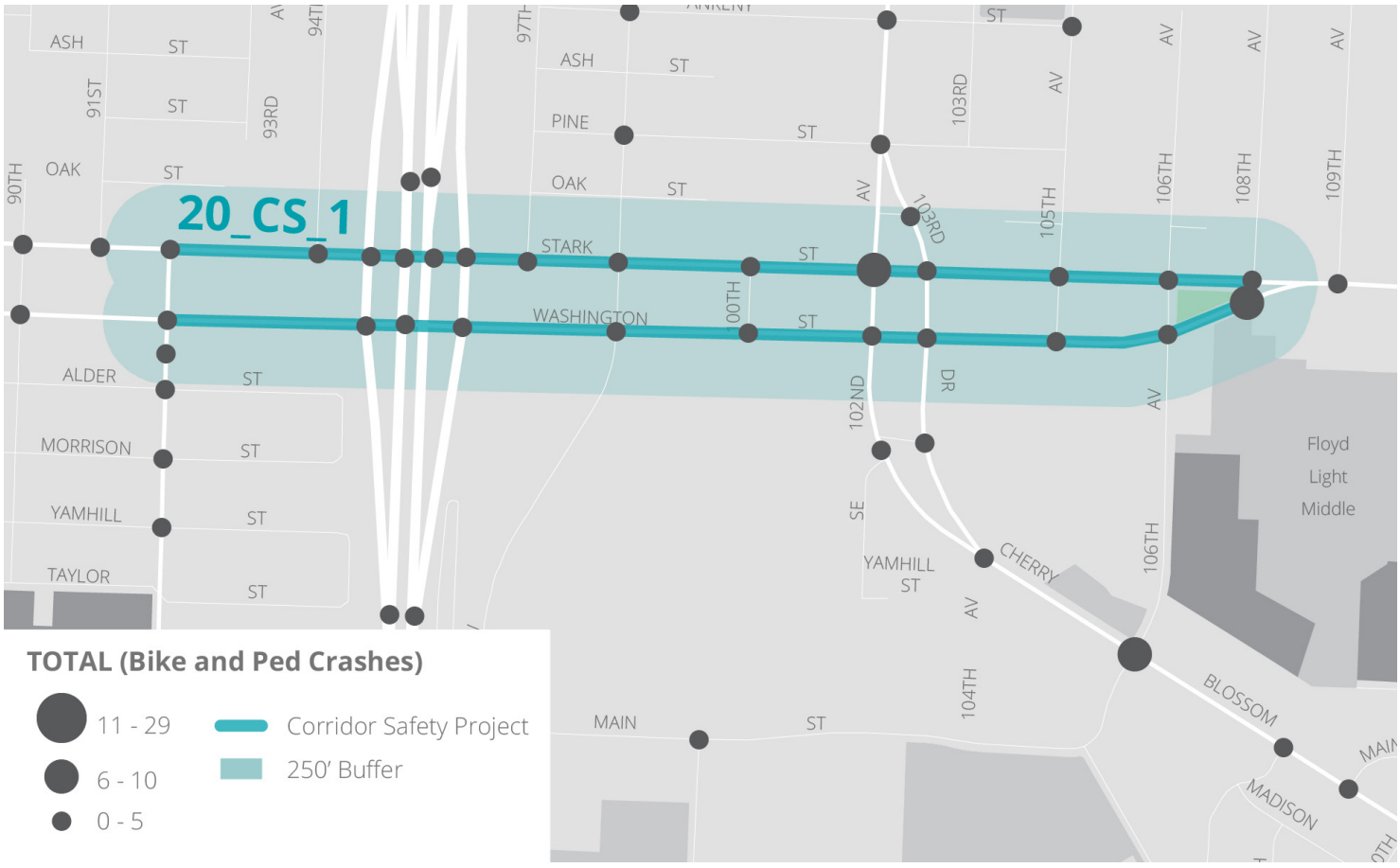
Halsey Corridor - Traffic Signals Weighted

ID	Location	ActiveTrans Total Score	Rank Order
77_TS_5	NE 82nd Ave & Jonesmore St: Improve safety	245.06	2
77_TS_8	NE 122nd Ave & San Rafael St: Improve safety	189.16	3
77_TS_1	NE Halsey St & 47th Ave: Improve safety and reduce transit delay	160.23	6
77_TS_6	NE Halsey St & Jonesmore St: Improve safety and reduce transit delay	136.28	7
77_TS_3	NE Halsey St & 60th Ave: Improve safety and reduce transit delay	121.36	11
77_TS_2	NE Halsey St & 57th Ave: Improve safety and reduce transit delay	89.49	14
77_TS_4	NE Halsey St & 74th Ave: Improve safety and reduce transit delay	87.78	15

Criteria for Evaluating and Scoring Candidate Projects in the Active Trans Tool

	Criteria	Active Trans Category	Types of Measures	Data Source	What Counts	Analysis Buffers
1	**Transportation Safety**	**Safety**	Crash history	State crash data points	# of Ped and Bike fatalities (double weight), Serious Injuries (double weight), All Injuries	# within 250 ft radius buffer
			High Crash Network	Vision Zero analysis layer	On a High Crash Corridor	Y/N: 100 ft radius buffer
			High Crash Intersection	Vision Zero analysis layer	Near High Crash intersection	250 ft radius buffer
			Crash risk factors	Vision Zero analysis layer	Crash Factor Average Score	250 ft radius buffer
2	**Improves Access to Transit**	**Access to Transit**	Proximity of project to bus stop or MAX line and ability to improve access to the stop.	TriMet transit stop layer	# of bus and MAX stops	250 ft radius buffer
			Average Daily MAX and Bus Ridership (Weekly average ons/offs at nearby bus stop)	TriMet 2015 Passenger Census	# of ons and offs	250 ft radius buffer
			Monthly Average Bus Ramp Deployment	TriMet 2015 Passenger Census	# of ramp deployments	250 ft radius buffer
3	**Proximity to Essential Destinations**	**Demand**	Number of nearby essential destinations. Community Centers (GIS Enterprise Layers), Grocery Stores (GIS Enterprise Layers), Clinics (see email from Neil), and Hospitals (GIS Enterprise Layers), Parks (GIS Enterprise Layers), and Schools (GIS Enterprise Layers)	GIS Enterprise Layers	# of destinations	500 ft buffer
4	**Equity. Serves Transportation Disadvantaged People and Vulnerable Roadway Users**	**Equity**	1. Minority population 2. Low-income population 3. Limited English Proficiency (LEP) population 4. Senior population 5. Youth population 6. People with disabilities 7. Limited vehicle access households 8. Low and medium wage jobs 9. Affordable housing units 10. Key retail/human/social services	TriMet's Transit Equity Index/ Communities of Concern	Average Score for Intersecting Census Tracts	
5	**Identified in a Plan or Prioritized Previously**	**Stakeholder Input**	In the Portland Transportation System Plan (TSP), Bicycle Plan 2030, Pedestrian Master Plan, East Portland In Motion (EPIM), Eastside Station Areas Plan, etc.		Number of plans	

	Criteria	Active Trans Category	Types of Measures	Data Source	What Counts	Analysis Buffers
6	**Network Connectivity Benefit/ Convenience**	**Connectivity**	Increases convenience, connectivity and access. Reduces out of direction travel along streets and reduces delay waiting to cross streets.	Pedestrian Network Analysis	Increase in access from all addresses to all addresses through reduced impedance.	½ mile buffer
			Scoring bikeway projects: Increase connectivity for cycling.	Methodology: 3 points if it fills a major network gap, particularly if it crosses a major barrier (like a freeway) or completes a couplet (SE Washington is the main example) 2 points if it fills a network gap but there are other available routes (no major barriers) 1 point if it is addressing a deficiency in existing facilities		
7	**Improves Transit Service and Operations**	**Transit Ops**	Reduces delay to buses.		# of recognized delays	
8	**Public Support**	**Stakeholder Input**	Based on public comment during the planning process.		# of public comments about need or support	
9	**Serve the most people nearby**	**Demand**	Forecasted Housing Density in 2035		# of Units	1000 ft radius buffer
			Forecasted Job Density in 2035		# of Jobs	1000 ft radius buffer
	Personal Security	***Discontinued – Not scored in this analysis***	*Crime report history from Portland Police Bureau*	*Crime data points*	*Number of crime reports near bus stop*	*100 ft radius buffer*
			Reports of locations with unsafe activity, reported to TriMet, Police or PBOT (if data is available)	*Ask TriMet for data*		



This example shows the buffer for a corridor safety project on Stark and Washington intersecting bicycle and pedestrian crashes.

APPENDIX C:
ACTIVE TRANS PRIORITIZATION TOOL SCORE RESULTS

LINE 77 - MIDDLE HALSEY

Corridor Safety Weighted

ID	Location	ActiveTrans Total Score	Rank Order
77_CS_3	NE Halsey St (114th - 131st): Corridor Safety Project	127.89	3
77_CS_1	NE Halsey St (47th - 57th): Corridor Safety Project	59.86	4

Crossings Weighted

ID	Location	ActiveTrans Total Score	Rank Order
77_X_6	NE 60th Ave at Oregon St	270.54	1
77_X_5	NE Willow St at 60th Ave (east leg)	267.19	2
77_X_32	NE 122nd Ave between Multnomah and Wasco	225.66	4
77_X_12	NE Halsey St at 68th/70th Ave	206.62	7
77_X_30	NE Halsey St at 119th Ave	162.74	20
77_X_33	NE Halsey St at 126th Ave	150.86	23
77_X_14	NE Halsey St at 72nd Ave	149.09	25
77_X_22	NE 82nd Ave at Holladay St	144.28	26
77_X_7	NE Glisan St at 62nd Ave	138.14	28
77_X_31	NE 122nd Ave between Broadway and Hancock	124.48	30
77_X_18	NE 81st Ave at Clackamas	120.61	33
77_X_17	NE Halsey St at 80th/81st Ave	120.41	34
77_X_10	NE Halsey St at 65th Ave	118.55	35
77_X_21	NE 82nd Ave at Schuyler St	112.81	36
77_X_1	NE Halsey St at 50th Ave	108.63	37
77_X_28	NE 102nd Ave at Tillamook St	106.05	38
77_X_25	NE Halsey St at 88th Ave	106.00	39
77_X_16	NE Halsey St at 78th Ave	104.71	40
77_X_3	NE 60th Ave at Wasco St	96.86	41
77_X_4	NE 60th Ave at Hassalo St	93.57	43
77_X_8	NE Halsey St at 61st Ave	63.60	44

Greenways, Bike Lanes, and Trails Weighted

ID	Location	ActiveTrans Total Score	Rank Order
77_T_3	Halsey (82nd - 92nd) Trail	219.99	3
77_G_8	Woodland Park Neighborhood Greenway (Gateway TC - Tillamook/108th)	216.40	4
77_B_8	NE Halsey St (I-205 overpass)	181.97	7
77_G_9	San Rafael/Tillamook Neighborhood Greenway (102nd - 122nd)	179.24	9
77_G_6	NE Holladay St (80th - 87th): Neighborhood Greenway	153.78	16
77_G_7	NE 80th/81st Ave (Tillamook - 82nd/Jonesmore): Neighborhood Greenway	148.86	17
77_B_6	NE Halsey St (114th - 131st): Enhanced Bikeway	148.18	18
77_G_13	110s Neighborhood Greenway (Knott to Glisan)	146.83	19
77_B_4	NE 92nd Ave (Tillamook - Halsey): Bikeway	144.25	20
77_G_2	NE 60s Neighborhood Greenway (Sacramento - Davis)	143.61	21
77_B_7	NE Halsey St (82nd Ave overpass)	133.29	23
77_G_3	The Pocket Neighborhood Greenway (60th/Oregon - 68th/Halsey)	131.61	24
77_G_1	NE Wasco/Multnomah/Hassalo St (47th - 60th): Neighborhood Greenway	118.19	26
77_T_2	Broadway/Jonesmore (61st - 82nd) Trail	87.45	28
77_G_11	NE 65th Ave (Tillamook - Halsey)	69.64	29

Pedestrian Improvements on Busy Streets

ID	Location	ActiveTrans Total Score	Rank Order
77_S_10	NE 82nd Ave (Multnomah - Schuyler): Streetscape improvements	234.03	2
77_S_27	NE 81st Ave (Halsey - Clackamas): Sidewalk infill	155.03	13
77_S_28	NE Halsey St (82nd - 84th): Sidewalk infill	148.00	14
77_S_17	NE 111th Ave (Weidler - Russell): Sidewalk infill	139.31	20
77_S_4	NE 60th Ave (Holladay - Halsey): Widen sidewalks	126.33	32
77_S_11	NE Halsey St (84th - 92nd): Sidewalk infill	104.69	41

77_S_13	NE 92nd Ave (Halsey - Hancock): Sidewalk infill	88.39	49
77_S_25	NE 117th Ave (Russell - San Rafael): Sidewalk infill	64.47	59

Pedestrian Improvements on Local Streets

ID	Location	ActiveTrans Total Score	Rank Order
77_S_21	NE 118th Ave (Holladay - Halsey): Sidewalk infill	139.44	19
77_S_26	NE 126th Ave (Holladay - Halsey): Sidewalk infill	135.94	23
77_S_15	NE 106th Ave (Hancock - Weidler): Sidewalk infill	134.30	26
77_S_14	NE Hancock St (102nd - 104th) and NE 104th Ave (Hancock - Weidler): Sidewalk infill	125.60	33
77_S_24	NE 119th Ave (Halsey - San Rafael): Sidewalk infill	117.61	35
77_S_22	NE 114th Ave (Halsey - San Rafael): Sidewalk infill	116.45	36
77_LS_5	NE 119th Ave (Holladay to the north): Street paving	114.30	37
77_S_9	NE 81st Ave (Multnomah - Holladay): Sidewalk infill	113.11	38
77_S_23	NE 118th Ave (Halsey - San Rafael): Sidewalk infill	111.48	39
77_S_16	NE 106th Ave (Holladay - Wasco): Sidewalk infill	92.98	46
77_S_20	NE 114th Ave (Holladay - Multnomah): Sidewalk Infill	91.00	47
77_S_7	NE Clackamas St (72nd - 81st): Sidewalk infill	88.50	48
77_S_5	NE Oregon St (61st - 63rd): Sidewalk infill	85.30	50
77_S_19	NE 112th Ave (Halsey - Oregon): Sidewalk Infill	79.51	52
77_S_8	NE Multnomah St (76th - 81st: Sidewalk infill	78.99	53
77_LS_2	NE 86th Ave (Schuyler - Halsey): Street paving and ped connection	78.50	54
77_S_6	NE Hassalo St (65th - 67th): Sidewalk infill	73.99	55
77_S_18	NE 112th/113th Ave (Weidler - San Rafael): Sidewalk infill	73.47	56
77_S_12	NE 90th Ave (Halsey - Broadway): Sidewalk infill	68.47	57
77_LS_1	NE 84th Ave (Halsey - Tillamook): Street paving	68.47	58
77_LS_6	NE Clackamas St (69th - 70th; 71st - 72nd)	64.26	60
77_S_2	NE Hassalo St (57th - 60th): Sidewalk infill	63.47	61
77_S_3	60th Ave Station Area Local Streets (61st, 62nd, Wasco, Multnomah, Hassalo, Holladay): Sidewalk Infill	56.13	62
77_S_1	NE 55th Ave (Wasco - Hassalo) and NE Multnomah St (53rd - 54th): Sidewalk infill	54.20	63

Traffic Signals Weighted

ID	Location	ActiveTrans Total Score	Rank Order
77_TS_5	NE 82nd Ave & Jonesmore St: Improve safety	245.06	2
77_TS_8	NE 122nd Ave & San Rafael St: Improve safety	189.16	3
77_TS_1	NE Halsey St & 47th Ave: Improve safety and reduce transit delay	160.23	6
77_TS_6	NE Halsey St & Jonesmore St: Improve safety and reduce transit delay	136.28	7
77_TS_3	NE Halsey St & 60th Ave: Improve safety and reduce transit delay	121.36	11
77_TS_2	NE Halsey St & 57th Ave: Improve safety and reduce transit delay	89.49	14
77_TS_4	NE Halsey St & 74th Ave: Improve safety and reduce transit delay	87.78	15

LINE 20 - OUTER STARK - BURNSIDE

Corridor Safety Weighted

ID	Location	ActiveTrans Total Score	Rank Order
20_CS_2	SE Stark St (108th - 162nd): Corridor Safety	325.00	1
20_CS_1	SE Stark/Washington Couplet (92nd - 108th): Corridor Safety	196.61	2

Crossings Weighted

ID	Location	ActiveTrans Total Score	Rank Order
20_X_10	SE Stark St at 105th Ave	243.61	3
20_X_2	NE Glisan St at 92nd Ave	220.86	5
20_X_16	SE Stark St at 146th Ave	209.84	6
20_X_11	SE Washington St at 105th Ave	205.70	8
20_X_8	SE Stark St at 100th Ave	183.52	10
20_X_9	SE Washington St at 100th Ave	183.32	11
20_X_20	SE Stark & 155th Pl	181.66	12
20_X_3	E Burnside St at 90th Ave	181.52	13
20_X_13	SE Stark St at 119th Ave	171.35	16
20_X_18	SE Stark St & 111th Ave	165.89	17
20_X_14	SE Stark St at 136th Ave	165.09	18
20_X_7	SE 102nd Ave at Pine St	161.68	21
20_X_4	E Burnside St at 94th Ave	153.87	22
20_X_5	SE Stark St at 90th Ave	125.08	29
20_X_6	SE Washington St at 90th Ave	96.03	42

Greenways, Bike Lanes, and Trails Weighted

ID	Location	ActiveTrans Total Score	Rank Order
20_B_1	E Burnside St (81st - 83rd): Bikeway	300.78	1
20_B_3	SE 102nd Ave (Burnside - Stark): Bikeway	287.68	2
20_B_5	SE Stark St (108th - 162nd): Bikeway	209.71	5
20_G_2	Mid 130s Neighborhood Greenway (Glisan - Mill)	173.15	10
20_G_1	110s Neighborhood Greenway (Glisan - Market)	169.99	11
20_G_3	140s Neighborhood Greenway (Glisan - Main)	162.40	13
20_B_2	SE Washington St (76th - 91st): Bikeway	111.30	27

Pedestrian Improvements on Busy Streets

ID	Location	ActiveTrans Total Score	Rank Order
20_S_8	SE 130th Ave (Stark - Market)	190.99	4
20_S_6	SE 117th Ave Sidewalk Infill: Stark - Market	169.83	6
20_S_10	SE 139th Ave (Burnside - Stark)	102.69	44

Pedestrian Improvements on Local Streets

ID	Location	ActiveTrans Total Score	Rank Order
20_S_7	SE 129th Ave (Burnside - Stark)	168.50	7
20_S_1	NE/SE 90th St Sidewalk Infill: Stark - Glisan	166.26	8
20_S_14	SE 151st Ave (Burnside - Main)	160.68	9
20_S_17	SE 160th Ave (Stark - Alder)	158.22	10
20_S_12	SE 143rd Ave (Burnside - Stark)	155.61	12
20_S_5	SE 108th Ave Sidewalk infill: Burnside - Stark	147.28	15
20_S_11	SE 141st Ave (Burnside - Taylor)	142.22	17
20_S_16	SE 155th Pl (Burnside - Stark)	139.47	18
20_S_2	NE 92nd Pl Sidewalk Infill: Burnside - Glisan	138.87	21
20_S_15	SE 155th Ave (Stark - Parklane Park)	138.17	22
20_S_13	SE 146th Ave (Burnside - Stark)	135.26	24
20_S_9	SE 133rd Ave (Burnside - Stark)	134.74	25
20_S_3	NE/SE 94th Ave Sidewalk Infill: Stark - Glisan	131.45	27
20_LS_2	SE 127th Ave (Burnside - Stark)	128.32	29

LINE 20 - OUTER STARK - BURNSIDE CONT.

Traffic Signals Weighted

ID	Location	ActiveTrans Total Score	Rank Order
20_TS_2	E Burnside St & 102nd Ave: Improve safety	253.35	1
20_TS_1	E Burnside St & 99th Ave: Improve safety and accessibility	133.76	8
20_TS_6	SE Stark & 139th Ave: Improve safety	112.76	12

LINE 87 - AIRPORT WAY

Crossings Weighted

ID	Location	ActiveTrans Total Score	Rank Order
87_X_8	NE Airport Way at Mason	189.80	9
87_X_3	NE Airport Way at 131st Ave	172.73	14
87_X_1	Airport Way at Ainsworth Circle	172.59	15
87_X_10	NE 148th Ave & Marine Dr	163.24	19
87_X_7	NE Airport Way at 162nd	150.22	24
87_X_6	NE Airport Way at 152nd	140.26	27
87_X_5	NE Sandy Blvd at 141st	123.43	31
87_X_11	NE 158th Ave & Marine Dr	122.23	32

Greenways, Bike Lanes, and Trails Weighted

ID	Location	ActiveTrans Total Score	Rank Order
87_T_1	IKEA Trail: Alderwood - Cascade Station	183.00	6
87_B_1	NE 148th Ave (Airport Way - Sandy)	180.59	8
87_T_3	Cross Levee Trail: Sandy - Marine Dr	168.93	12
87_B_3	NE 158th Ave (Mason - Sandy)	160.32	14
87_B_2	NE 158th Ave (Airport Way - Mason)	159.01	15
87_B_4	NE Alderwood Rd (Glass Plant Rd - 105th)	141.39	22
87_B_5	NE Airport Way (I-205 Path - Holman)	123.36	25

Pedestrian Connection Weighted

ID	Location	ActiveTrans Total Score	Rank Order
87_PC_1	NE 122nd Ave & Airport Way: Pedestrian Connections	191.22	1
87_PC_2	NE 138th Ave & Airport Way: Pedestrian Connections	185.29	2
87_PC_3	NE 148th Ave & Airport Way: Pedestrian Connections	164.14	3
87_PC_4	NE Portal Way to Airport Way: Pedestrian Connections	16.67	4

Pedestrian Improvements on Busy Streets

ID	Location	ActiveTrans Total Score	Rank Order
87_S_2	NE 105th Ave (Sandy - Alderwood): Sidewalk infill	247.46	1
87_S_4	NE 122nd Ave (Airport Way - Marine Dr): Sidewalk infill	205.28	3
87_S_3	NE Holman St (I-205 - 112th): Sidewalk infill	182.89	5
87_S_5	NE 122nd Ave (Inverness - Ainsworth): Sidewalk Infill	156.20	11
87_S_6	NE 122nd Ave (Marx - Whitaker): Sidewalk Infill	144.23	16
87_S_7	NE 138th Ave (Sandy - Airport Way): Sidewalk Infill	130.35	28
87_S_10	NE 158th Ave (Airport Way - Mason): Sidewalk infill	126.93	30
87_S_9	NE Airport Way (148th - Mason): Sidewalk Repair	126.70	31
87_S_8	NE 148th Ave (Sandy - Airport Way): Sidewalk Infill	108.49	40
87_S_1	NE Marx St (105th - 109th): Sidewalk infill	93.89	45
87_S_11	NE 158th Ave (Mason - Sandy): Sidewalk Infill	84.83	51

Traffic Signals Weighted

ID	Location	ActiveTrans Total Score	Rank Order
87_TS_1	NE 122nd & Airport Way	183.25	4
87_TS_2	NE 138th & Airport Way	180.68	5
87_TS_3	NE 148th & Airport Way	132.80	9
87_TS_5	NE Airport Way & Riverside	121.67	10
87_TS_4	NE 158th & Airport Way	110.18	13

APPENDIX D:
ADOPTING RESOLUTION

RESOLUTION No.

Adopt the recommendations contained within the Growing Transit Communities Plan. (Resolution)

WHEREAS, the Portland 2035 Comprehensive Plan includes goal 9.B, that Portland's transportation system is funded and maintained to achieve multiple goals and measureable outcomes for people and the environment. The transportation system is safe, complete, interconnected, multimodal, and fulfills daily needs for people and businesses; and

WHEREAS, the Portland 2035 Comprehensive Plan includes policy 9.22, regarding public transportation, to coordinate with public transit agencies to create conditions that make transit the preferred mode of travel for trips that are not made by walking or bicycling; and

WHEREAS, the Portland 2035 Comprehensive Plan includes policy 9.24, regarding transit service, in partnership with TriMet, to develop a public transportation system that conveniently, safely, comfortably, and equitably serves residents and workers 24 hours a day, 7 days a week; and

WHEREAS, the Portland 2035 Comprehensive Plan includes policy 9.25, regarding transit equity, in partnership with TriMet, to maintain and expand high-quality frequent transit service to all Town Centers, Civic Corridors, Neighborhood Centers, Neighborhood Corridors, and other major concentrations of employment, and improve service to areas with high concentrations of poverty and historically under-served and under-represented communities; and

WHEREAS, the Portland 2035 Comprehensive Plan includes policy 9.5, to increase the share of trips made using active and low-carbon transportation modes. Reduce Vehicle Miles Traveled (VMT) to achieve targets set in the most current Climate Action Plan and Transportation System Plan, and meet or exceed Metro's mode share and VMT targets; and

WHEREAS, the Portland 2035 Transportation System Plan update adopted by City Council in December 2016 includes Objective 9.26.h; by 2035, to reduce the number of miles Portlanders travel by car to 11 miles per day on average and 70 percent of commuters walk, bike, take transit, carpool, or work from home; and

WHEREAS, the Portland Plan and the Climate Action Plan have established a mode split goal of 25% of all trips on transit by 2035, and the 2035 Regional Transportation Plan includes a goal of tripling transit mode share over 2005 levels; and

WHEREAS, Portland is projected to add 140,000 new jobs and 260,000 new residents over the next 20 years; and

WHEREAS, the Growing Transit Communities Investment Plan was identified as a part of the Comprehensive Plan process and included in the Portland 2035 Transportation System Plan Section 12 Refinement Plans and Studies, in the update adopted by City Council in December 2016; and

WHEREAS, under No. 186634 on June 11, 2014, Council authorized application to the Oregon Department of Transportation and Department of Land Conservation and Development for four Transportation and Growth Management grants, including a Growing Transit Communities Plan; and

WHEREAS, under Ordinance No. 187105 on May 6, 2015, City Council authorized an agreement to accept a Transportation Growth Management (TGM) grant in the amount of $151,360 from the Oregon Department of Transportation and authorize an Intergovernmental Agreement for the Growing Transit Communities Plan; and

WHEREAS, the Growing Transit Communities Plan identifies and prioritizes the most beneficial improvements in corridor investment plans that will make getting to the bus and using the bus a safer and more convenient option for sections of bus line 87 along outer NE Airport Way, bus line 77 along middle NE Halsey, and bus line 20 along outer SE Stark-Burnside; and

WHEREAS, the Growing Transit Communities Plan focuses on these three corridors because they have the potential to become transit-oriented communities, though each have barriers. More specifically, these corridors have transit service that is not yet frequent and barriers in the walking and biking environment, yet the 2035 Portland Comprehensive Plan includes planned housing and job growth and planned bus service improvements in TriMet Service Enhancement Plans; and

WHEREAS, the Growing Transit Communities Plan focuses on these three corridors because they include areas with higher concentrations of poverty and historically under-served and under-represented communities; and

WHEREAS, the priority projects in the Growing Transit Communities Plan have been vetted by the community and filtered through a set of criteria and technical analysis. The three most important criteria based on community input were weighted more heavily when evaluating and prioritizing projects, including transportation safety, making it easier to get to bus stops, and equity; and

WHEREAS, community members throughout the Growing Transit Communities Plan study area contributed to the planning process through an inclusive outreach strategy that included two open houses, use of language interpreters, two online surveys, tabling at events in each corridor, presentations to various committees and community groups, and eight Community Advisory Group meetings between November 2015 and March 2017; and

WHEREAS, Portland Bureau of Transportation staff coordinated development of the plan with TriMet, ODOT and other relevant city Bureaus; and

WHEREAS, increasing transit service frequency and targeted investments in access to transit are ways to increase transit ridership. Implementing the Growing Transit Communities Plan will help the City reach the above policy goals and accommodate future growth.

NOW, THEREFORE, BE IT RESOLVED, that the City of Portland adopts the Growing Transit Communities Plan as Non-Binding City Policy attached as Exhibit A; and

BE IT FURTHER RESOLVED, that the Growing Transit Communities Plan will serve as a guiding strategy for improvements to the transportation system in the study area; and

BE IT FURTHER RESOLVED, the Council directs the Portland Bureau of Transportation to incorporate the recommendations of the Growing Transit Communities Plan as a part of the next update of the City's Transportation System Plan (TSP), including amendments to existing TSP major system improvement project descriptions and the addition of new projects as either major projects or smaller projects in the Citywide Programs, as described in the Recommendations chapter of the Plan, starting on page 18 (Exhibit A); and

BE IT FURTHER RESOLVED, that staff is directed to engage in activities to implement the improvements and recommendations described in the Growing Transit Communities Plan; and

BE IT FURTHER RESOLVED, in recognition of the City's investment in safe and attractive access to transit, the Council encourages TriMet to continue increasing bus service along bus lines 87, 77 and 20 in line with the TriMet Service Enhancement Plan vision, to help achieve the City's transit mode share goals, advance several of the City's broader Comprehensive Plan policies and grow more transit-oriented communities; and

BE IT FURTHER RESOLVED that the City Council gratefully acknowledges the excellent work and dedication of the members of the Growing Transit Communities Plan Community Advisory Group and other community members who helped shape the plan through participation in the planning process.

Adopted by the Council,

Mary Hull Caballero
Auditor of the City of Portland
By

Deputy

Commissioner DAN SALTZMAN
Prepared by: *April Bertelsen; SP*
Date Prepared: July 10, 2017

Agenda No.

RESOLUTION NO.

Title

Adopt the recommendations contained within the Growing Transit Communities Plan.(Resolution)

INTRODUCED BY Commissioner/Auditor: **COMMISSIONER DAN SALTZMAN**	CLERK USE: DATE FILED _____
COMMISSIONER APPROVAL	Mary Hull Caballero Auditor of the City of Portland
Mayor—Finance and Administration - Wheeler	By: _____ Deputy
Position 1/Utilities - Fritz	
Position 2/Works - Fish	**ACTION TAKEN:**
Position 3/Affairs - Saltzman	
Position 4/Safety -Eudaly	
BUREAU APPROVAL	
Bureau: **Transportation** Policy, Planning & Projects **Group Manager: Art Pearce** **Director: Leah Treat**	
Prepared by: April Bertelsen: support staff Date Prepared:7/11/17 Supervisor: Mauricio Leclerc	
Impact Statement Completed ☒ Amends Budget ☐	
Portland Policy Document If "Yes" requires City Policy paragraph stated in document. Yes ☒ No ☐	
City Auditor Office Approval: required for Code Ordinances	
City Attorney Approval: required for contract, code, easement, franchise, comp plan, charter	
Council Meeting Date **August 10, 2017**	

AGENDA
TIME CERTAIN ☒ **Start time: 3:10 PM** **Total amount of time needed: 1 hour** **(for presentation, testimony and discussion)**
CONSENT ☐
REGULAR ☐ **Total amount of time needed: _____** **(for presentation, testimony and discussion)**

FOUR-FIFTHS AGENDA	COMMISSIONERS VOTED AS FOLLOWS:		
		YEAS	NAYS
1. Fritz	1. Fritz		
2. Fish	2. Fish		
3. Saltzman	3. Saltzman		
4. Eudaly	4.Eudaly		
Wheeler	Wheeler		